

- 24 -

CLAIMS:

1. A method of activating a subwindow (80) of an electrophoretic display (10), the method comprising:
  - receiving image information (14) for the subwindow;
  - determining an image-holding time (82) for the subwindow; and
  - addressing the subwindow of the electrophoretic display based on the received image information and the image-holding time.
2. The method of claim 1, wherein determining the image-holding time includes determining the time interval between updating at least a portion of the electrophoretic display and addressing the subwindow of the electrophoretic display.
3. The method of claim 1, wherein addressing the subwindow of the electrophoretic display includes writing pixel data onto at least one electrophoretic pixel (22) in the subwindow.
4. The method of claim 1, wherein the subwindow of the electrophoretic display is addressed to minimize an optical-state mismatch between the addressed subwindow and another portion of the electrophoretic display.
5. The method of claim 1, further comprising:
  - selecting a driving waveform (60) based on the image-holding time for the subwindow; and
  - addressing the subwindow of the electrophoretic display based on the selected driving waveform.
6. The method of claim 5, wherein the selected driving waveform includes an image-dependent portion having at least one data frame (70) based on the received image information and a current optical state of at least one electrophoretic pixel in the subwindow.
7. The method of claim 5, wherein the image-dependent portion of the selected driving waveform includes an image-dependent shaking pulse (66).
8. The method of claim 5, wherein the selected driving waveform includes an image-independent portion including at least one shaking pulse (66).
9. The method of claim 5, wherein the selected driving waveform includes an image-independent portion including a reset pulse.

- 25 -

10. The method of claim 5, wherein the driving waveform is selected from a lookup table.
11. The method of claim 5, further comprising:  
adjusting the selected driving waveform based on a scaling factor from a scaling factor table.
12. The method of claim 5, further comprising:  
adjusting a number of data frames in the selected driving waveform based on the image-holding time; and  
addressing the subwindow of the electrophoretic display with the adjusted driving waveform to activate the subwindow.
13. The method of claim 5, further comprising:  
adjusting an activation voltage amplitude of the selected driving waveform based on the image-holding time; and  
addressing the subwindow of the electrophoretic display with the adjusted driving waveform to activate the subwindow.
14. The method of claim 1, further comprising:  
adjusting a data-frame time (74) of at least one data frame based on the image-holding time;  
and  
addressing the subwindow of the electrophoretic display with the at least one data frame and the adjusted data-frame time.
15. A system (12) for activating a subwindow (80) of an electrophoretic display (10), the system comprising:  
an electrophoretic pixel array (20) disposed on a backplane (32);  
means for receiving image information (14) for the subwindow;  
means for determining an image-holding time (82) for the subwindow; and  
means for addressing the subwindow of the electrophoretic display based on the received image information and the image-holding time.
16. The system of claim 15, further comprising:

- 26 -

means for selecting a driving waveform (60) based on the image-holding time for the subwindow; and

means for addressing the subwindow of the electrophoretic display based on the selected driving waveform.

17. The system of claim 16, further comprising:

means for adjusting the selected driving waveform based on a scaling factor from a scaling factor table.

18. The system of claim 15, further comprising:

means for adjusting a data-frame time (74) of at least one data frame (70) based on the image-holding time; and

means for addressing the subwindow of the electrophoretic display with the at least one data frame and the adjusted data-frame time.

19. An electrophoretic display (10), comprising:

an electrophoretic pixel array (20) disposed on a backplane (32);

a row driver (40) electrically connected to a set of rows (44) of the electrophoretic pixel array;

a column driver (50) electrically connected to a set of columns (54) of the electrophoretic pixel array; and

a controller (30) electrically connected to the row driver and the column driver;

wherein the controller determines an image-holding time (82) for a subwindow (80) of the electrophoretic display; and

wherein the controller addresses the subwindow of the electrophoretic display based on the received image information and the image-holding time to activate at least one electrophoretic pixel (22) in the electrophoretic pixel array.

20. The electrophoretic display of claim 19, wherein the controller receives image information (14) for the subwindow.